Antenna Research Associates

M-100-4

Revision G

Issued 5 Nov 2024

Conforms to ISO 9001:2015

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0.0 Revision History and Approval

Rev.	Nature of changes	Approval	Date
A	Initial Release	Logen Thiran	30 Apr 2019
B	Updated Org Chart Updated Quality Policy Updated Main Processes	OM Petini	17 April 2020
C	Updated Context of the Organization file nomenclature in section 4.1 & 4.2	OM Petini	7 July 2020
D	Updated Document reference numbers in section 7.5, 6.0, 7.1.3, 8.5.1, 8.5.4, 8.5.2, & 9.3	OM Petini	20 July 2020
E	• Updated section 4.4.3 & 6.3 to accommodate the AQYR Processes variations. • Updated Appendix A - IOP Diagram	OM Petini	05 Nov 2020
F	Minor formatting changes and update to provide clarification in sections 2.0, 3.0, 4.3, 7.5	D. Thuillier	13 Nov 2020
G	Re-write to represent one ARA Quality Manual. Updated Organization Chart with LOB, integrated Overall Process Sequence & Interaction to match One-ARA, and minor formatting.	D. Mkpasi	5 Nov 2024

1.0 Welcome to Antenna Research Associates

Antenna Research Associates (ARA) developed and implemented a Quality Management System to document the company's best business practices, better satisfy the requirements and expectations of its customers and improve the overall management of the company.

The Quality Management System of ARA meets the requirements of the International Standard ISO 9001:2015. This system addresses the production and servicing of the company's products.

The manual is divided into elements that correlate with the elements of the International Standard Organization; ISO 9001:2015. Each section provides specific information pertaining to the procedures that describe the methods used to implement the necessary requirements.

This manual describes the Quality Management System, delineates authorities, inter relationships and responsibilities of the personnel responsible for performing within the system. The manual also provides procedures and/ or references for all activities comprising the Quality Management System to ensure compliance with the necessary requirements of the standard.

This manual is used internally to guide the company's employees through the various requirements of the ISO standard that must be met and maintained to ensure customer satisfaction, continuous improvement and provide the necessary instructions that create an empowered work force.

Note:

- *Notes appear in italics, with gray background.*
- *This manual is used externally to introduce our Quality Management System to our customers and other external organizations or individuals. The manual is used to familiarize them with the controls that have been implemented and to assure them that the integrity of the Quality Management System is maintained and focused on customer satisfaction and continuous improvement.*

2.0 About the ARA Quality Manual

This manual is prepared for the purpose of defining the company's interpretations of the ISO 9001:2015 international standard, as well as to demonstrate how the company complies with that standard.

This manual presents "Notes" which are used to define how ARA has tailored its management system to suit its purposes. These are intended to clarify implementation approaches and interpretations for concepts which are not otherwise clearly defined in ISO 9001:2015.

Where subordinate or supporting documentation is referenced in this manual, these are indicated by ***bold italics***.

2.1 Subordinate documents exist within ARA-Wide Enterprise that are aligned with each business unit's types of operations. These documents can be classified as Standard Operating Procedures SOPs); Work Instructions (WIs); and Forms.

2.2 Where applicable, subordinate documents are complemented by additional Specifications and/ or Standards that may be invoked by ARA, Customers, Industries, or Statutory requirements.

Our Quality Management System has been developed using a process approach and the key processes are shown below. Further details are included in respective procedures in the Procedures Manual.

NOTE - numbers in brackets refer to ISO 9001:2015 Clauses.

3.0 Terms and Definitions

ARA adopts the following terms and definitions within its Quality Management System. Where no definition is provided, the company typically adopts the definitions provided in ***ISO 9000: Quality Management–Fundamentals and Vocabulary***. In some cases, specific procedures or documentation may provide a different definition to be used in the context of that document; in such cases, the definition will supersede those provided for in this Quality Manual or ISO 9000.

General Terminology

ARA – Antenna Research Associates

Document – written information used to describe how an activity is done.

Record – captured evidence of an activity having been done.

Risk-Based Thinking Terminology

Risk – Negative effect of uncertainty.

Opportunity – Positive effect of uncertainty.

Uncertainty - A deficiency of information related to understanding or knowledge of an event, its consequence, or likelihood. (Not to be confused with measurement uncertainty.)

4.0 Context of the Organization

4.1 Understanding the Organization and Its Context

ARA has reviewed and analyzed key aspects of itself and its stakeholders to determine the strategic direction of the company. This requires understanding internal and external issues that are of concern to ARA and its interested parties (per 4.2 below); the interested parties are identified per the document ***F-475-10 ARA COTO Log.***

Such issues are also monitored and updated as appropriate and discussed as part of management reviews.

4.2 Understanding the Needs and Expectations of Interested Parties

The issues determined per 4.1 above are identified through an analysis of risks facing ARA and its interested parties. "Interested parties" are those stakeholders who receive our products, or who may be impacted by them, or those parties who may otherwise have a significant interest in our company.

These parties are identified per the document ***F-475-10 ARA COTO Log.***

This information is then used by senior management to determine the company's strategic direction as part of the Management Review and Continuous Improvement efforts.

4.3 Determining the Scope of the Quality Management System

Based on an analysis of the Needs and Expectations, interests of stakeholders, and in consideration of its products and services, ARA has determined the scope of the Quality Management System as follows:

Research and Development (R&D), Design, and Manufacture of Antennas and Antenna Systems for military and commercial applications.

The Quality Management System applies to all processes, activities, and employees across the ARA-Wide Enterprise which facilities are currently located at:

ARA-Laurel **8880 Gorman Rd.** **Laurel, Md. 20723** **(301) 937-8888**	**ARA-Pembroke** **28 Riverside Dr.** **Pembroke, MA 02359** **(781) 829-4740**	**ARA-Nashua** **100 Innovation Way Suite 3410** **Nashua, NH 03062** **(603) 402-7100**	**ARA-Billerica** **267 Boston Road** **Suite 5** **Billerica, MA 01862** **(978) 495-5300**

ARA Website:

http://www.ara-inc.com

4.4 Quality Management System and Its Processes

4.4.1 Process Identification

ARA has adopted a process approach for its management system by identifying the top-level processes within the organization, and then managing each of these discreetly. This approach is intended to infuse mitigation factors, thereby establishing robust processes that eliminate potentials nonconformance and then improve First Time Yield (FTY) within the organization.

Note: Not all activities are considered "processes" – the term "process" in this context indicates the activity has been elevated to a higher level of control and management oversight. The controls indicated herein are applicable only to the top-level processes identified.

The following top-level processes have been identified for ARA:

Main Processes:

1. Business Development
2. Sales/ Quoting
3. Engineering Design
4. Planning
5. Purchasing
6. Receiving/ Inventory Control
7. Production
8. Shipping
9. Finance
10. Program Management

Supporting Processes:

- Information Technology/ Security
- Design & Development
- Document Control
- Equipment Calibration
- Nonconforming Product Control
- Training
- Continual Improvement/ CAR Actions System
- Human Resources
- Risk Management
- Configuration Management
- Resource Management
- Communications
- Outsourcing Control
- Performance Evaluation
- Internal Audit
- Records Control

Each process may be supported by other activities, such as tasks or sub-processes. Monitoring and control of top-level processes ensures effective implementation and control of all subordinate tasks or sub-processes.

Each top-level process has a ***Process Definition*** document which defines:

- applicable inputs and outputs.
- process owner(s)
- applicable responsibilities and authorities.
- applicable risks and opportunities.

- critical and supporting resources.
- criteria and methods employed to ensure the effectiveness of the process.
- quality objectives related to that process.

The sequence of interaction of these processes is illustrated in **ARA Top-Level Processes Interaction Chart -** displayed in Appendix A.

Note: Appendix A represents the typical sequence of processes and may be altered depending on customer or regulatory requirements at the job or contract level, as needed.

4.4.2 Process Controls & Objectives

Each process has at least one objective established for it; this is a statement of the intent of the process. Each objective is then supported by at least one "metric" or key performance indicator (KPI) which is then measured to determine the process' ability to meet the quality objective.

Note: some processes have multiple objectives and multiple metrics. This is determined by the nature of the process, it's impact on products, and associated risks.

Note: Whereas ISO 9001 discusses process measurements and "quality objectives" as separate concepts, ARA combines them, i.e., quality objectives are used to control the processes. Additional objectives for products may be assigned, but these will also be used to measure process effectiveness.

Throughout the year, metrics data is measured and gathered by process owners or other assigned managers to present data to The Management Team. The data is then analyzed by The Management Team in order that the Management Team may set goals and adjust for the purposes of continual improvement.

The specific quality objectives for each process are defined in the applicable ***Process Definition Documents***.

Metrics, along with current standings and goals for each objective are determined as appropriate by the senior leadership and recorded appropriately during the management review processes.

When a process does not meet a goal, or an unexpected problem is encountered with a process, the corrective and preventive action process is implemented to research and resolve the issue. In addition, opportunities for improvement are sought and implemented, for the identified processes.

4.4.3 Outsourced Processes

Any process performed by a third party is considered an "outsourced process" and must be controlled, as well. The company's outsourced processes, and the control methods implemented for each, are defined in ***Purchasing Procedure-P-235-1 and M-100-5 ARA Supplier Quality Management Plan***.

Other documents and forms at the local facility levels may be applicable as appropriate.

The type and extent of control to be applied to the outsourced process take into consideration:

a) the potential impact of the outsourced process on the company's capability to provide product that conforms to requirements,

b) the degree to which the control for the process is shared,

c) the capability of achieving the necessary control through the purchasing contract requirements.

5.0 Leadership

5.1 Leadership & Commitment

5.1.1 General

The Management Team of ARA provides evidence of its leadership and commitment to the development and implementation of the management system and continually improving its effectiveness by:

a) taking accountability of the effectiveness of the management system.

b) ensuring that the ***Quality Policy*** and quality objectives are established for the management system and are compatible with the strategic direction and the context of the organization.

c) ensuring that the quality policy is communicated, understood, and applied within the organization.

d) ensuring the integration of the management system requirements into the organization's other business processes, as deemed appropriate (see note).

e) promoting awareness of the process approach.

f) ensuring that the resources needed for the management system are available.

g) communicating the importance of effective quality management and of conforming to the management system requirements.

h) ensuring that the management system achieves its intended results.

i) engaging, directing, and supporting persons to contribute to the effectiveness of the management system.

j) promoting continual improvement.

k) supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.

Note: "business processes" such as accounting, employee benefits management and legal activities are out of scope of the QMS.

5.1.2 Customer focus

The Management Team of ARA adopts a customer-first approach which ensures that customer needs and expectations are determined, converted into requirements, and are timely met, with the aim of enhancing customer satisfaction.

This is accomplished by assuring:

a) Customer and applicable statutory and regulatory requirements are determined, understood, and consistently met.

b) The risks and opportunities that can affect conformity of products and services and the ability to enhance customer satisfaction are determined and addressed.

c) The focus on enhancing customer satisfaction is maintained.

5.2 Policy

The Management Team has developed the Quality Policy, that governs day-to-day operations to ensure quality.

The Quality Policy is released as a standalone document as well and is communicated and implemented throughout the organization.

The Quality Policy of ARA is as follows:

> ***A****ntenna Research Associates will provide quality products in a timely manner.*
>
> ***R****esulting in enhanced customer satisfaction.*
>
> ***A****chieved through continuous improvements to our quality management system.*

5.3 Organizational Roles Responsibilities and Authorities

The Management Team has assigned responsibilities and authorities for all relevant roles in the company. These are communicated through the combination of the ***ARA Organizational Chart-F-484-2*** and Job Descriptions.

In addition, the following overall QMS responsibilities and authorities are assigned as follows:

Responsibility	Assigned To
Ensuring that the management system conforms to applicable standards	The Management Team
Ensuring that the processes are delivering their intended outputs	Director of Quality
Reporting on the performance of the management system and providing opportunities for improvement for the management system	Director of Quality
Ensuring the promotion of customer focus throughout the organization	The Management Team
Ensuring that the integrity of the management system is maintained when changes are planned and implemented	The Management Team

The Director of Quality has been assigned the role of ISO Management Rep when having a single point of contact to represent the ARA quality system is useful or required by customer or regulations. Other duties of the ISO Management Rep may be defined herein or within other documented procedures.

6.0 Planning

6.1 Actions to Address Risks and Opportunities

Note: ARA deviates slightly from the approach towards risk and opportunity presented in ISO 9001. Instead, ARA views "uncertainty" as neutral, but defines "risk" as a negative effect of uncertainty, and "opportunity" as a positive effect of uncertainty. ARA has elected to manage risks and opportunities separately, except where they may overlap. Formal risk management may not be utilized in all instances; instead, the level of risk assessment, analysis, treatment, and recordkeeping will be performed to the level deemed appropriate for each circumstance or application.

ARA considers risks and opportunities when taking actions within the management system, as well as when implementing or improving the management system; likewise, these are considered relative to products and services. Risks and opportunities are identified as part of the "Context of the Organization Exercise" defined in ***Context of the Organization, Procedure - P-211-1***, as well as throughout all other activities of the QMS.

Risks and opportunities are managed in accordance with the document ***Risk & Opportunity, Procedure-P-211-2.*** This procedure defines how risks are managed to minimize their likelihood and impact, and how opportunities are managed to improve their likelihood and benefit.

6.2 Quality Objectives and Planning to Achieve Them

As part of the adoption of the process approach, ARA utilizes its process objectives, as discussed in 4.4 above, as the main quality objectives for the QMS. These include overall product-related quality objectives; additional product-related quality objectives may be defined in work instructions or customer requirements.

The process objectives have been developed in consideration that they:

a) be consistent with the quality policy.

b) be measurable.

c) consider applicable requirements.

d) be relevant to conformity of products and services and to enhancement of customer satisfaction.

e) be monitored.

f) be communicated.

g) be updated as appropriate.

Process quality objectives are defined in the minutes of management review per section 9.3 below.

The planning of process quality objectives is defined in section 4.4. above.

6.3 Planning of Changes

Changes to the quality management system and its processes are carried out in a planned manner per the procedure **Configuration Management-*P-220-1.***

7.0 Support

7.1 Resources

7.1.1 General

ARA determines and provides the resources needed:

a) to implement and maintain the management system and continually improve its effectiveness.

b) to enhance customer satisfaction by meeting customer requirements.

Resource allocation is done with consideration of the capability and constraints on existing internal resources, as well as needs related to supplier expectations.

Resources and resource allocation are assessed during management reviews.

7.1.2 People

Senior management ensures that it provides sufficient staffing for the effective operation of the management system, as well as its identified processes.

7.1.3 Infrastructure

ARA determines, provides, and maintains the infrastructure needed to achieve conformity to product requirements. Infrastructure includes, as applicable:

a) buildings, workspace, and associated facilities.

b) process equipment, hardware, and software.

c) supporting services such as transport.

d) information and communication technology.

Equipment is validated per the procedure ***Control of Monitoring and Measuring Devices- P-290-7*** and maintained per the procedure ***Preventive Maintenance Procedure- P-290-8.***

7.1.4 Environment for the Operation of Processes

ARA provides a clean, safe, and well-lit working environment. The Management Team of ARA manages the work environment needed to achieve conformity to product requirements. Specific environmental requirements for products are determined during quality planning and are documented in subordinate procedures, work instructions, or job documentation. Where special work environments have been implemented, these shall also be maintained per 6.3 above.

Human factors are considered to the extent that they directly impact the quality of products.

Note: Social, psychological and safety aspects of the work environment are managed through activities outside of the scope of the management system. Only work environment aspects which can directly affect process efficiency or product and service quality are managed through the management system.

7.1.5 Monitoring and Measuring Resources

Where equipment is used for critical measurement activities, such as inspection and testing, these shall be subject to control and either calibration or verification; see the procedure ***Control of Monitoring and Measuring Devices P-290-7.***

Note: Calibration and measurement traceability is not employed for all measurement devices. Instead, ARA determines which devices will be subject to calibration based on its processes, products, and services, or to comply with specifications or requirements. These decisions are also based on the importance of a measurement, and considerations of risk.

7.1.6 Organizational Knowledge

ARA also determines the knowledge necessary for the operation of its processes and to achieve conformity of products and services. This may include knowledge and information obtained from:

a) internal sources, such as lessons learned, feedback from subject matter experts, and/or intellectual property.

b) external sources such as standards, academia, conferences, and/or information gathered from customers or suppliers.

This knowledge shall be maintained and made available to the extent necessary.

When addressing changing needs and trends, ARA shall consider its current knowledge and determine how to acquire or access the necessary additional knowledge.

7.2 Competence

Staff members performing work affecting product quality are competent based on appropriate education, training, skills, and experience. The documented procedure ***Training Procedure-P-260-1*** defines these activities in detail.

Note: the management system does not include other aspects of Human Resources management, such as payroll, benefits, insurance, labor relations or disciplinary actions.

7.3 Awareness

Training and subsequent communication ensure that the staff are aware of:

a) the quality policy.

b) relevant quality objectives.

c) their contribution to the effectiveness of the management system, including the benefits of improved performance.

d) the implications of not conforming with the management system requirements.

7.4 Communication

The Management Team of ARA ensures internal communication takes place regarding the effectiveness of the management system. Internal communication methods include:

a) use of corrective and preventive action processes to report nonconformities or suggestions for improvement

b) use of the results of analysis of data

c) meetings (periodic, scheduled and/or unscheduled) to discuss aspects of the QMS.

d) use of the results of the internal audit process

e) regular company meetings with all employees

f) internal emails

g) ARA's "open door" policy which allows any employee access to The Management Team for discussions on improving the quality system.

7.5 Documented Information

The management system documentation includes both documents and records.

Note: the ISO 9001:2015 standard uses the term "documented information"; ARA does not use this term, but instead relies on the terms "document" and "record" to avoid confusion. In this context the terms are defined by ARA as provided for in section 3.0 above. Documents and records undergo different controls as defined herein.

The extent of the management system documentation has been developed based on the following:

a) The size of ARA

b) Complexity and interaction of the processes

c) Risks and opportunities

d) Competence of personnel

e) Customer requirements

Documents required for the management system are controlled in accordance with procedure ***Document Control Procedure-P-210-1.*** The purpose of document control is to ensure that staff have access to the latest, approved information, and to restrict the use of obsolete information. All documented procedures are established, documented, implemented, and maintained.

A documented procedure ***Records Control Procedure-P-220-2*** has been established to define the controls needed for the identification, storage, retrieval, protection, retention time, and disposition of quality records. This procedure also defines the methods for controlling records that are created by and/or retained by suppliers.

These controls are applicable to those records which provide evidence of conformance to requirements; this may be evidence of Product or Services requirements, contractual requirements, procedural requirements, or statutory/regulatory compliance. In addition, quality records include any records which provide evidence of the effective operation of the management system.

8.0 Operation

8.1 Operational Planning and Control

ARA plans and develops the processes needed for realization of its products. Planning of Product realization is consistent with the requirements of the other processes of the management system. Such planning considers the information related to the context of the organization (see section 4.0 above), current resources and capabilities, as well as Product requirements.

Such planning is accomplished through:

a) determining the requirements for the products.

b) establishing criteria for the processes and the acceptance of products.

c) determining the resources needed to achieve conformity to the product requirements.

d) implementing control of the processes in accordance with the criteria.

e) Determining, maintaining, and retaining documented information to the extent necessary to have confidence that the processes have been carried out as planned and to demonstrate the conformity of products to their requirements.

Changes to operational processes are made in accordance with the document ***Configuration Management- P-220-1.***

Outsourced processes and how ARA controls them are defined in the documented procedure ***Purchasing Procedure-P-235-1*** and ***ARA Supplier Quality Management Plan- M-100-5.***

8.2 Requirements for Products and Services

8.2.1 Customer Communication

ARA has implemented effective communication with customers in relation to:

a) providing information relating to products.

b) handling enquiries, contracts, or orders, including changes.

c) obtaining customer feedback relating to products and services, including customer complaints.

d) handling or controlling customer property.

e) establishing specific requirements for contingency actions, when relevant.

8.2.2 Determining the Requirements Related to Products and Services

During the intake of new business ARA captures:

a) requirements specified by the customer, including the requirements for delivery and post-delivery activities.

b) requirements not stated by the customer but necessary for specified or intended use, where known

c) statutory and regulatory requirements related to products.

d) any additional requirements determined by ARA.

These activities are defined in greater detail in the procedure ***Quotes Orders and Order Changes Procedure-P-245-2.***

8.2.3 Review of Requirements Related to Products and Services

Once requirements are captured, ARA reviews the requirements prior to its commitment to supply the product(s). This review ensures that ARA has the capability and capacity to:

a) meet all requirements specified by the customer, including requirements for delivery and post-delivery activities.

b) meet any requirements not stated by the customer, but which ARA knows as being necessary.

c) meet all requirements determined necessary by ARA itself.

d) meet all related statutory and regulatory requirements.

e) meet any contract or order requirements differing from those previously expressed (i.e., from a previous ARA quote).

These activities are defined in greater detail in the ***Quotes Orders and Order Changes Procedure-P-245-2.***

8.2.4 Changes to Requirements for Products and Services

ARA updates all relevant requirements and documents when the requirements are changed and ensures that all appropriate staff are notified; see the documented procedure **Configuration Management-*P-220-1.***

8.3 Design and Development of Products and Services

For new designs and for significant design changes, ARA ensures the translation of customer needs and requirements into detailed design outputs. These address performance, reliability, maintainability, testability, and safety issues, as well as regulatory and statutory requirements.

This process ensures:

a) Design planning is conducted.

b) Design inputs (requirements) are captured.

c) Design outputs are created under controlled conditions.

d) Design reviews, verification and validation are conducted.

e) Design changes are made in a controlled manner.

These activities are further defined in the document **Design and Development Process Procedure**-***P-230-1.***

8.4 Control of Externally Provided Processes, Products and Services

ARA ensures that purchased product(s) conform to specified purchase requirements. The type and extent of control applied to the supplier and the purchased products or services are dependent on the effect on subsequent product or service realization or the final product.

ARA evaluates and selects suppliers based on their ability to supply products and services in accordance with the organization's requirements. Criteria for selection, evaluation and re-evaluation are established.

Purchases are made via the release of formal purchase orders and/or contracts which clearly describe what is being purchased. Received products or services are then verified against requirements to ensure satisfaction of requirements. Suppliers who do not provide conforming products or services may be requested to conduct formal corrective action.

These activities are further defined in the documents ***Purchasing Procedure-P-235-1, Incoming Parts Inspection Procedure-W-370-8, ARA Supplier Quality Management Plan-P-100-5 and Receiving Procedure-W-391-2.***

8.5 Production and Service Provision

8.5.1 Control of Production and Service Provision

To control its provision of products, ARA considers, as applicable, the following:

a) the availability of documents and/ or records that define the characteristics of the products as well as the results to be achieved.

b) the availability and use of suitable monitoring and measuring resources.

c) the implementation of monitoring and measurement activities.

d) the use of suitable infrastructure and environment.

e) the appointment of competent people, including any required qualifications.

f) the implementation of actions to prevent human error.

g) the implementation of release, delivery, and post-delivery activities.

There are certain cases where ARA will not utilize any in-house “special processes” where the result of the process cannot be verified by subsequent monitoring or measurement. Any such special processes would be sent to outside suppliers and controlled and an outsourced process per ***Supplier Quality Management, P-100-5.***

8.5.2 Identification and Traceability

Where appropriate, ARA identifies its product or service(s) or other critical process outputs by suitable means. Such identification includes the status of the [Product or Service] with respect to monitoring and measurement requirements. Unless otherwise indicated as nonconforming, pending inspection or disposition, or some other similar identifier, all products shall be considered conforming and suitable for use.

If unique traceability is required by contract, regulatory, or other established requirement, ARA controls and records the unique identification of the products or services.

The documented procedure ***Identification & Traceability Procedure, P-290-1*** defines these methods in detail.

8.5.3 Property Belonging to Customers or External Providers

ARA exercises care with customer or supplier property while it is under the organization’s control or being used by the organization. Upon receipt, such property is identified, verified, protected, and safeguarded. If any such property is lost, damaged, or otherwise found to be unsuitable for use, this is reported to the customer or supplier and records maintained.

For customer intellectual property, including customer furnished data used for design, production and / or inspection, this is identified by customer and maintained and preserved to prevent accidental loss, damage, or inappropriate use.

This activity is defined in greater detail in the document ***Customer Property Management Procedure, W-370-20.***

8.5.4 Preservation

ARA preserves conformity of product or other process outputs during internal processing and delivery. This preservation includes identification, handling, packaging, storage, and protection. Preservation also applies to the constituent parts of a product.

The documented procedure ***Material Handling Instructions & Guidelines, W-380-2*** defines the methods for preservation of product.

8.5.5 Post-Delivery Activities

As applicable, ARA conducts the following activities which are considered “post-delivery activities”:

- Warranty Provisions

Post-delivery activities are conducted in compliance with the management system defined herein. In determining the extent of post-delivery activities that are required, ARA considers:

a) statutory and regulatory requirements.

b) the potential undesired consequences associated with products.

c) the nature, use and intended lifetime of its products.

d) customer requirements.

e) customer feedback.

8.5.6 Control of Changes

ARA reviews and controls both planned and unplanned changes to processes to the extent necessary to ensure continuing conformity with all requirements.

Process change management is defined in the document **Configuration Management, *P-220-1.***

Documents are changed in accordance with procedure ***Document Control Procedure, P-210-1.***

8.6 Release of Products and Services

Acceptance criteria for products are defined in appropriate subordinate documentation. Reviews, inspections, and tests are conducted at appropriate stages to verify that the requirements have been met. This is done before products are released or services are delivered.

Each process utilizes different methods for measuring and releasing products. These methods are defined in ***Process Definition Documents***.

8.7 Control of Nonconforming Outputs

ARA ensures that products or other process outputs that do not conform to their requirements are identified and controlled to prevent their unintended use or delivery.

The controls for such nonconformances are defined in ***Control of NCP Procedure, P-270-1.***

9.0 Performance Evaluation

9.1 Monitoring, Measurement, Analysis and Evaluation

9.1.1 General

ARA has determined which aspects of its quality management system must be monitored and measured, as well as the methods to utilize and records to maintain, within this ARA ISO9001:2015 Quality Manual-M-100-4 and subordinate documentation.

Monitoring and measurement of the processes, as defined in 4.4.2 above, ensure that the Management Team evaluates the performance and effectiveness of the quality management system itself.

9.1.2 Customer Satisfaction

As one of the measurements of the performance of the management system, ARA monitors information relating to customer perception as to whether the organization has met customer requirements. The methods for obtaining and using this information include:

- recording customer complaints

- product rejections or returns.
- repeat orders for product.
- changing volume of orders for product
- trends in on-time delivery
- obtain customer scorecards from certain customers.
- submittal of customer satisfaction surveys

The corrective and preventive action system shall be used to develop and implement plans for customer satisfaction, improvements that address deficiencies identified by these evaluations and assess the effectiveness of the results.

9.1.3 Analysis and Evaluation

ARA analyzes and evaluates the data and information arising from monitoring and measurement to evaluate:

a) conformity of products.

b) the degree of customer satisfaction.

c) the performance and effectiveness of the quality management system.

d) if planning has been implemented effectively.

e) the effectiveness of actions taken to address risks and opportunities.

f) the performance of external providers.

g) the need for improvements to the quality management system.

Statistical techniques used may be defined in appropriate documented procedures; in all cases, the methods are based on established standards or are otherwise determined to be statistically valid.

9.2 Internal Audit

ARA conducts internal audits at planned intervals to determine whether the management system conforms to contractual and regulatory requirements, the requirements of ISO 9001, and to management system requirements. Audits also seek to ensure that the management system has been effectively implemented and is maintained.

These activities are defined in the document ***Internal Auditing Procedure, P-280-1.***

9.3 Management Review

The Management Team reviews the management system, at **planned intervals**, to ensure its continuing suitability, adequacy, and effectiveness. The review includes assessing opportunities for improvement, and the need for changes to the management system, including the ***Quality Policy*** and quality objectives. Records from management reviews are maintained.

10.0 Improvement

10.1 General

ARA uses the management system to improve its processes, products, and services. Such improvements aim to address the needs and expectations of customers as well as other interested parties, to the extent possible.

Improvement shall be driven by an analysis of data related to:

The results of analysis shall be used to evaluate:

a) conformity of products and services.

b) the degree of customer satisfaction.

c) the performance and effectiveness of the management system.

d) the effectiveness of planning.

e) the effectiveness of actions taken to address risks and opportunities.

f) the performance of external providers.

g) other improvements to the management system.

10.2 Nonconformity and Corrective Action

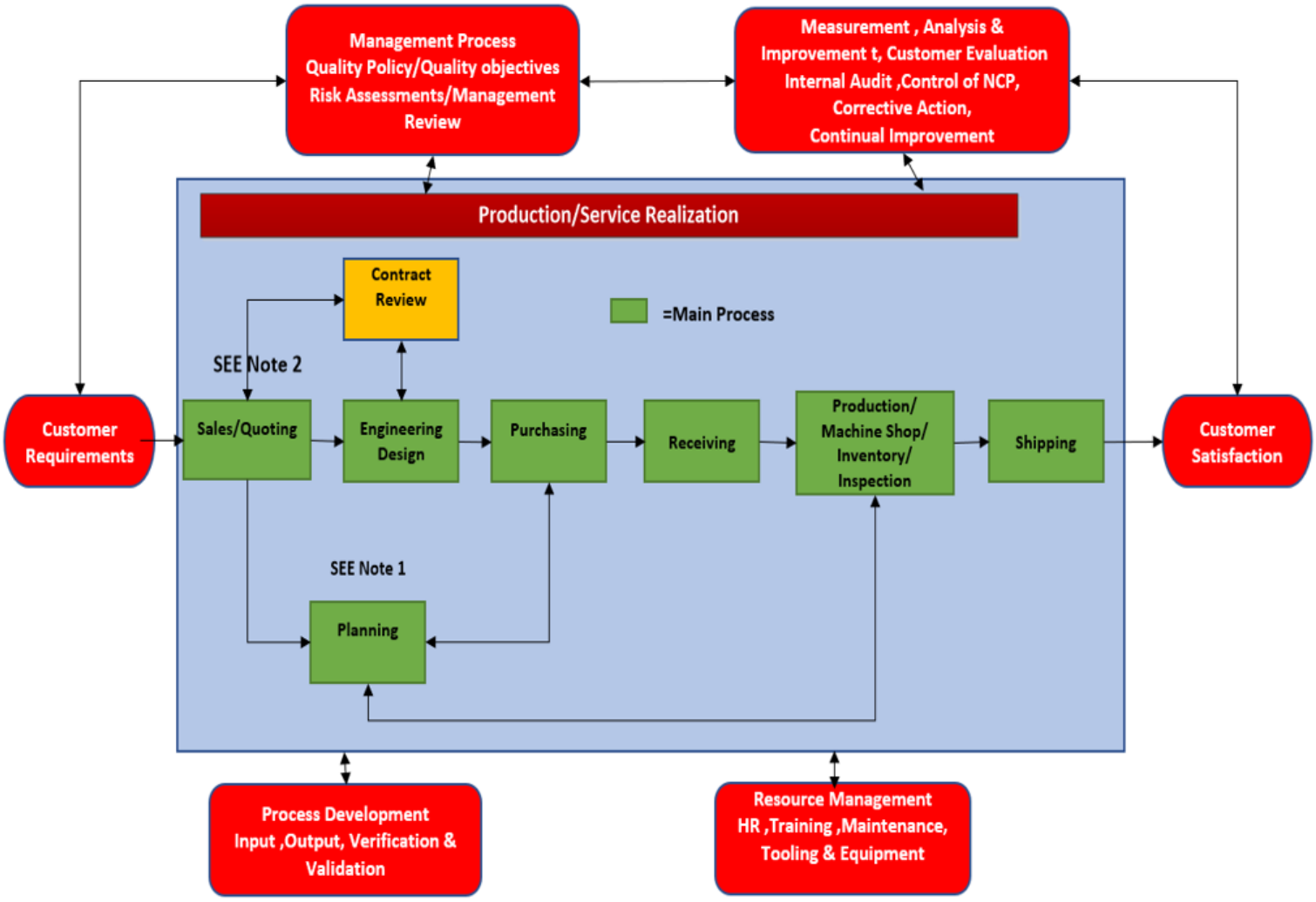
ARA takes corrective action to eliminate the cause of nonconformity to prevent recurrence. Likewise, the company takes preventive action to eliminate the causes of potential nonconformities to prevent their occurrence.

These activities are done using the formal Corrective Action managed in the ARA CAR Data Base system and are defined in the document ***Corrective Action Procedure-P-280-4.***

10.3 Continual Improvement

Through the process of effectiveness reviews, done as part of Management Review, ARA works to continually improve the suitability, adequacy, and effectiveness of the quality management system. This includes seeking opportunities for improvement.

Appendix A: Overall Process Sequence & Interaction (IOP)



Notes:

2: Sales/Quoting process activities are controlled by the ARA Sales department.

1: Planning Process activities are included in the ARA-Wide central Purchasing Process.

Appendix A: Overall Process Sequence & Interaction (IOP) cont.

Appendix B: ARA Organization Structure